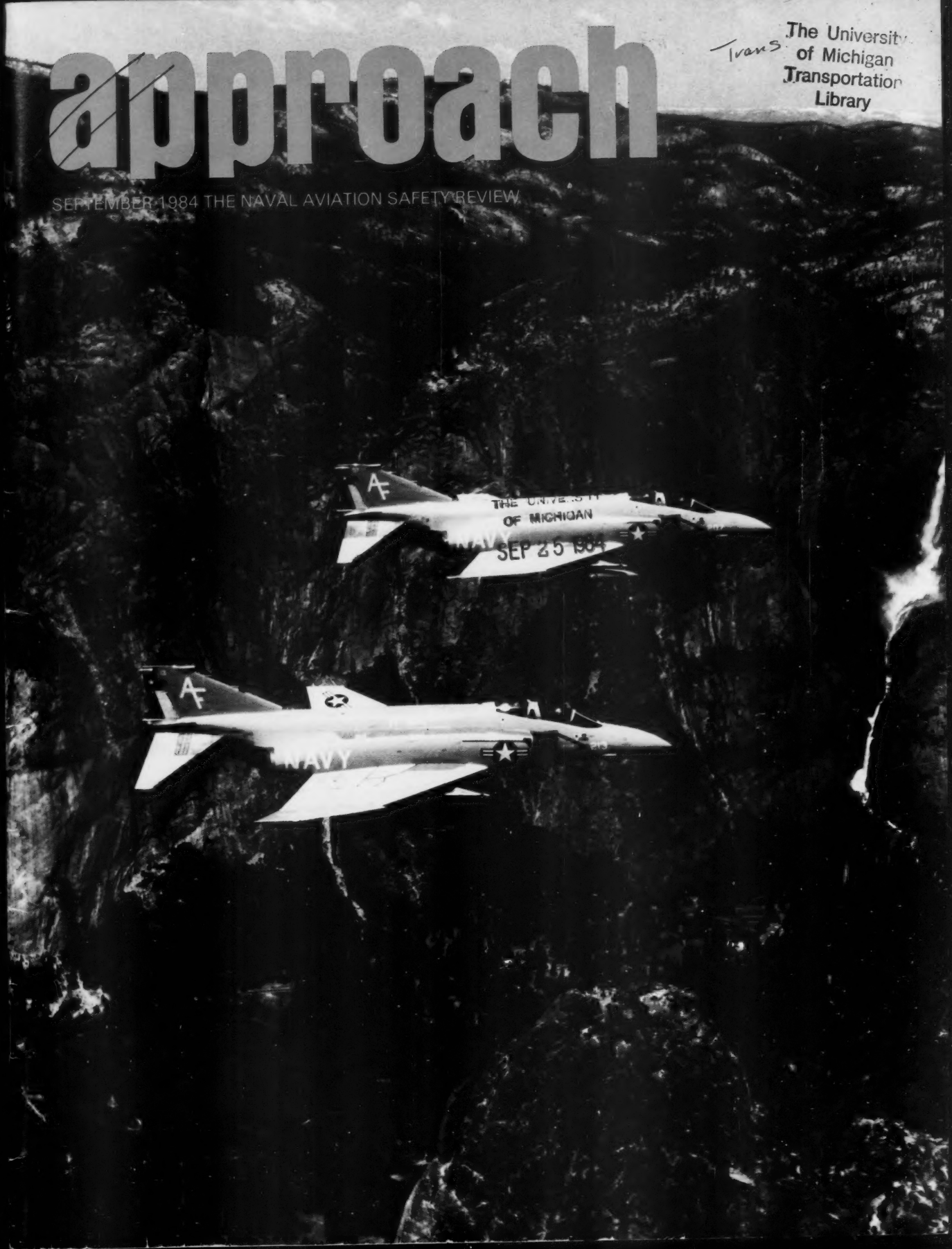
approach

SEPTEMBER 1984 THE NAVAL AVIATION SAFETY REVIEW



Requiem For A Friend

I have had this feeling before, and know that this time will not be any different.

The seasoning I have gained through the years has not lessened the gnawing, hollow pain I feel deep within my mind and body. And I am not alone.

I want to scream in my rage, clench my fists and lash out against something or someone. But there is nothing. For, despite my best efforts and those of countless others, I have again lost a dear friend in the violent impact and searing heat of an aircraft mishap.

What have I, and all the writers, planners, thinkers and directors done wrong? What important point have we missed? Should we have recognized an impending disaster? Or, after all is said and done, is it merely human nature that is at fault?

Man is not a machine. A properly engineered aircraft, with an accurate computer at the controls, can fly fast and low over the same path again and again without incident. Man does not. He is imperfect. He errs. And so, without that margin for safety so critical in aviation, he will sooner or later make that error and pay the ultimate price for his human frailties.

I am committed to making others recognize the gap between justifiable pride in our abilities and a sober realization of our limits. And I am also committed to instilling safety in the very core of every aviator and aircrewman, certain that none of us can afford the alternative.

By Lt. Col. W.S. Lawrence
HML-287

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inside approach

Vol. 30 No. 2

A section of Naval Air Reserve Phantoms flies over the Sierras. (VFP-206)

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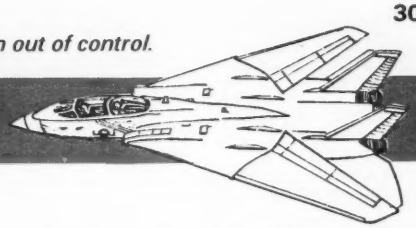

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MISHAP

Yuma, Ariz. — "He barely survived an estimated 61

. . . he heard two bangs in the engine and dropped fast. They sounded like "firecrackers in the intake." . . .

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Harries

positive Gs when his AV-8 Harrier slammed onto the runway."

Harrier Pilot

A Painful Aftermath

By Bud Baer
Approach Staff

HIS landing pattern was normal, but as he crossed the threshold at about 100 feet at 30 knots, he heard two bangs in the engine and dropped fast. They sounded like "firecrackers in the intake."

"The next thing I remember was people pulling me out of the cockpit,"said Capt. Ralph D. (Doug) Dawson, USMC. "I noticed a little fire. Then I was lying on the runway in great pain. I saw that foam had been sprayed all around. I wanted to get up and leave the mess behind me — but I couldn't walk."

Dawson was flying with Marine Attack Squadron (VMA) 513, out of Marine Corps Air Station, Yuma, Ariz. The mission was close air support of Combined Arms Exercise (CAX) 3-83 at Twenty-Nine Palms, Calif., on an expeditionary landing field.

Witnesses who saw the mishap said the V/STOL (vertical/short takeoff and landing) aircraft made two loud booms with accompanying sparks and short flame bursts from the rear exhaust nozzles. It appeared the pilot tried to accelerate to wingborne airspeed but lost power and settled with a rapidly increasing sink rate. The nose began to drop and the wings rocked slightly as the plane dropped. It impacted the runway, shearing off all four landing gear. The aircraft passed through a huge fireball which erupted on impact — then skidded 1,000 feet down the runway. No ejection was attempted and, had it been, may not have been successful since the force of impact tore the ejection seat off the bulkhead.

The crash crew and squadron personnel arrived at the scene almost immediately and put out a small fire under the starboard wing.

Witnesses saw the canopy was open and Dawson slumped forward and to the left, his head hanging over the port canopy rail. A fast thinking staff sergeant grabbed the pilot's hands as he came to and, still groggy, tried to reach the upper ejection handle. He was gingerly lifted from the cockpit by the crash crew and squadron personnel. He was placed on a stretcher and carried to a helicopter for transportation to 29 Palms Dispensary.

Dawson was in severe pain from back injuries. No drugs were administered on the scene or in the helicopter due to the anticipated nature of his injuries. He was soon transported to the nearest hospital, Dwight D. Eisenhower Medical Center at Rancho Mirage close to Palm Springs. About the trip, from the accident scene to the hospital, Dawson said "severe pain makes time really drag — each five minutes seemed like at least a half hour." In actuality, a snowstorm reduced visibility so much that the helo was forced to land on the interstate and transfer Dawson to an ambulance to complete the trip to the hospital.

Examination by a neurosurgeon revealed he suffered a broken tail bone (sacrum) and other multiple spinal fractures. He later underwent two separate surgeries; one which involved fusion (essentially "gluing" pieces of bone back together) of the tailbone, the other which included a lamenectomy (removal of a ruptured disk) and fusion of the two vertebrae that the removed disk used to separate. He spent five weeks in Rancho Mirage.

Continued

Dawson spent another five weeks at Balboa Naval Hospital in San Diego before recovering sufficiently to go home for 30 days of convalescent leave. After returning to Balboa for an additional two weeks of recuperation and reevaluation, he returned to his squadron as Assistant Aircraft Maintenance Officer. He is now the VMA 513 Aircraft Maintenance Officer.

His recovery was painful and long. Doubts about himself and discouragement plagued his bad days. Squadron mates and a devoted wife, as well as his tough optimism, brought him out of those bleak days.

These thoughts cross Dawson's mind now and then: "Where did I foul up? Did I foul up? Was there a tendency on my part to stay with the aircraft? But I didn't have time to even consider ejection. The ground came up too fast."

One authoritative observer said that under such circumstances the pilot is totally preoccupied and has to be totally attentive with maintaining a level attitude while detecting, analyzing and reacting to a rapidly changing flight situation. A successful ejection in such instances is probable only if the pilot is absolutely certain of what is happening and initiates ejection immediately. The first reaction (the only viable reaction), however, of a V/STOL pilot experiencing rapid sink rate is to add power. This reaction and its expected response eat up the time necessary to initiate ejection at such a low altitude. The complete dependence of sensory "seat of the pants" flying during a transition to/from VSTOL flight forces the pilot into a regime where he is only marginally in the safe ejection envelope.

There is general agreement that Dawson had insufficient reaction time available to diagnose the problem, arrive at a decision and initiate a successful ejection. A fully qualified Harrier pilot, he has almost 1,100 hours with nearly 750 in the AV-8. He had logged 24 hours during the 30-day period before the mishap. He was in good physical condition. In addition, he had recently completed his second shipboard WESTPAC cruise.

"I flew off ships for a year and every landing was vertical," Dawson noted. "I lived off the engine and had developed complete confidence in it. I strove to always fly by the rules."

His plane's sudden loss of engine thrust was reportedly caused by disintegration of the high pressure compressor (HPC) due to a massive titanium fire in the compressor section — a rare occurrence.

The HPC disintegration probably began when a piece of third stage low pressure compressor (LPC) blade broke off and lodged in the HPC. This piece of blade generated friction and debris. This caused failure of a second stage HPC stator or a third stage HPC rotor, and the subsequent titanium fire. The *cause* of the third stage LPC blade failure *could not be determined* due to both pre- and post-impact damage.

Dawson's piloting technique was not considered a cause factor. Improper engine handling was not considered possible. Gross mishandling of the engine by operating in the jet pipe temperature/rpm bands beyond the automatic engine limiters will overtemp an engine.

Dawson operated the engine within limits until the first signs of disintegration appeared. The limiters were tripped only as a natural and correct response to arrest a gross, undemanded sink rate. The hot section of the engine remained completely intact and showed no evidence of throttle mishandling.

Rough handling or "stick-stirring" in V/STOL flight can increase the jet pipe temperature for a given airspeed which could affect the turbine but not cause compressor disintegration. But Dawson was known for his smooth V/STOL piloting technique and was coming in for the landing in calm, cool weather.

Asked if he wanted to go back on flight status after what he had been through, Dawson replied: "Absolutely!" With continued improving health, his chances of getting back in the cockpit appear favorable. ◄

Copilots: A Contributing Factor

By Ltjg. E.A. Wieman
VP-11

YOU'RE fresh out of the RAG*, a brand new No-P** assigned to Patrol Squadron OO. You hit the deck running and the next thing you know, you're a 3-P in minimum time. A little more hard work and you're a 2-P, NATOPS positionally qualified and ready for any eventuality . . . or are you? Chances are, you're probably more of a liability than that eager young No-P who checked into the squadron a little more than six months ago. Granted, you're more experienced, but you've also gotten more complacent. Put yourself in the following situation and see if you can avoid becoming a *contributing factor*.

"Navy BZ 001, Northeast approach. Expect a precision approach runway 01 at NAS North. Winds 360 at 05. Altimeter 30.16." "Northeast approach, Navy BZ 001, Roger. Altimeter 30.16." You're sitting right seat for a couple of approaches, a lieutenant (junior grade) who has made significant progress through the syllabus toward plane commander. The XO is trying to get a little left seat time so you're in the right seat for maybe the tenth time in six months. ("Boy, do I feel uncomfortable over here. I wish I was in the left seat. At least I know what I'm doing over there. Now if I can only remember what NATOPS says about copilot responsibilities.") The XO has been on board for about nine months. Fresh from a tour at TPS (test pilot school), he can really handle the airplane. He's got 3500+ hours and is generally considered the best stick in the squadron. ("It's a good thing that the XO's over there. He's got the airplane, and I'm just along for the ride.")

"Navy BZ 001.

"Ten miles from touchdown, perform landing checks."

"Navy BZ 001 has three down and locked." (Everything's going real smooth — a simulated precision approach and I'll be at the club for a cold one.")

"Navy BZ 001 approaching glidepath, do not acknowledge further transmissions. Begin descent from slightly below glidepath." The XO calls for the power reduction. ("He pulled off an awful lot of power. I guess he's gonna show me a new technique to get the airplane on the deck in a hurry.")

"Navy BZ 001. Slightly below glidepath, right of course. Turn left heading 350." ("The XO is some stick. We're at treetop level — but I don't think this is SOP — and we're kind of right of course — the XO must know what he's doing — and I've only got 500 hours in this bird — what do I know?")

"Navy BZ 001 — Too far right of course for safe approach. If field not in sight, execute missed approach." ("The XO's got the field — but isn't 40 degrees angle of bank on short final a little excessive? I'd wave it off — but he's got so much more experience. Still . . . I'm really uncomfortable — 20 degrees angle of bank over the threshold — don't the props strike at . . .")

Whether the prop strikes the runway or not, you've already become a contributing factor. And HAD the prop struck the runway, you'd be listed as such in black and white for all to see on an aviation mishap report. But 99 percent of the time, the guy in the left seat puts it on the deck; you get a few gray hairs, and you never say anything else about it. If you DON'T say something about it, you are part of a problem that could make you a contributing factor. As a copilot, part of your responsibility is to be a safety pilot. To be a good safety pilot, you need to communicate. **Talk** to the man in the left seat who's flying. Let him know that what he's doing isn't right and that it makes you extremely uncomfortable. Make it perfectly clear that you think the approach should be waved off. And finally, if you truly believe the aircraft to be in extremis, then it is your *duty* to do everything in your power to prevent a mishap — and that includes *taking the aircraft away from the person who is flying*. That may sound like sacrilege to some, but if the pilot — whether he's the XO or a junior plane commander — is worth his salt, he'll understand why you did it and you'll talk about it after you're on the deck. Thirty feet above the runway is not the place to debate the merits of waving off. The key is communications. Take pride in what you know — and know what it takes to be a good safety pilot. Give your pilot a good backup. Don't be a liability in the right seat — and avoid becoming a contributing factor. ◄

*RAG — Replacement Air Group
**No-P — Pilot Not Positionally Qualified in Model

Ride 'Em Cowboy. Well, NATOPS never covers it all, you just have to use your head sometimes. Every manual I ever studied had some statement like that. However, I never fell into one of those unexplored regions; then I flew my first cross country as an instructor.

One of the things I quickly learned about this flight instruction business is that it requires a lot of extra effort. We had not touched the aircraft, and I was hard at work. I felt like I had just explained the full history of radio instrument flight; from MDF (manual direction finding) to microwaves, but we were finally ready.

Preflight and takeoff went smoothly. We were level at our cruise altitude when we began our discussion of the anticipated en route approaches. We decided that NAS Central would be an excellent field to practice a couple. The weather was favorable and, since it was a Sunday night, there wasn't much traffic. The first approach was a nicely executed Hi TACAN to a touch-and-go. On downwind for a GCA we rechecked the ATIS (Automatic Terminal Information Service) tape in preparation for what turned out to be our final approach.

The student flew a nice precision approach, to a smooth touchdown just past the one board. As the aircraft slowed past 90 knots, an unusual sight appeared in the beam of our landing lights. It looked like a long-horned steer! Just prior to impact the student attempted to add power for takeoff. I took control, reduced the power to IDLE and yelled, "Ride it out!" Sounds like something out of a B grade western, huh?

When the aircraft came to a grinding stop, I secured it in accordance with the established emergency procedure in NATOPS. The 1,300-pound rodeo steer was hamburger, and the aircraft had a collapsed nose gear and a couple of newly designed J props.

The point is, there were no written procedures for a "steer strike." Sometimes, I guess the best thing to do is to live with your present situation. I hate to think what would have happened if I had gotten that aircraft into the sky.

Birdie, Birdie in the sky
Drop a whitewash in my eye
Me no baby, me no cry
Me just happy cows don't fly

Submitted by Lt. Jim Brewer, VT-31

Low Fuel Viking. It started out as a simple flight from USS *Ship* to Diego Garcia. Since it was our squadron's first such flight in the Indian Ocean, extensive preflight planning had been conducted. It appeared to all that the flight should be no problem. A four-hour, day VMC flight with 6+30 hours of fuel on board. What could be easier? The flight launched and proceeded as planned with the crew passing periodic HF position reports. All navigation was based on the INS and time-speed-distance computation, since no navaids were available en route. The first indication of a problem occurred when the TACAN continued to spin after their navigation showed them to be within TACAN range. HF comm with Diego verified the TACAN was up and operating. The crew checked and rechecked the navigation as they continued inbound. When the INS indicated they should be on top of Diego, the TACAN continued to spin and they still saw nothing but water. Diego has DF capability, but no radar. A DF bearing was received and flown for approximately 45 minutes. Still no TACAN lock and now they were losing UHF comm which they had established with

AIR BREAKS

another aircraft inbound to Diego. They immediately reversed course, realizing the DF steer they were on must be 180 degrees out. HF comm between the ship, Diego and the S-3 crew continued for the next hour, discussing their options. This simple flight had quickly turned into a real "can of worms." Then finally, the TACAN locked up. Diego was on the nose at 200 nm, but one serious problem still remained. There was not enough fuel on board to make it. A previously alerted KC-135 was launched to tank the S-3. The S-3 was now minutes from flameout as the tanker approached its position. To expedite visual contact, the tanker began dumping fuel. The Viking crew spotted the tanker, rendezvoused and plugged. At the time they plugged, 300 pounds (approximately nine minutes) of fuel showed on the totalizer. Tanking was completed and the Viking proceeded to Diego and landed.

Postflight analysis of the flight revealed that the INS winds had gradually become erroneous. This, combined with the unfortunate DF steer, nearly resulted in disaster. Fortunately, the only result was a shaken crew with an additional seven hours flight time and a bill for the fuel.

Submitted by Lt. G.E. Condray
VT-10

Buckeye Save. During a routine FAM hop in the T-2C Buckeye, the instructor pilot, Capt. David Mullins, set his aircraft up for a nose high, slow, unusual attitude maneuver. His student, 2nd Lt. Phillip Stein, performed the proper procedures, after taking control of the aircraft at 16,000 feet. Observing the airspeed slowing to 80 knots, Stein reduced power on both engines to idle and neutralized the controls. The aircraft recovered approximately 90 degrees nose down. Upon reaching 150 knots, Mullins instructed his student to initiate his 4G/15-unit recovery.

However, Mullins could not see a response from his student, and the T-2C continued its descent. Mullins attempted recovery, but with heavy stick forces and an hydraulic boost light illuminated, he had no success. He called for Stein to get on the stick with him to add another effort on the controls, and recovery was finally completed at 3,800 feet MSL and 380 knots.

Mullins and Stein then flew the Buckeye back to NAS Kingsville, executing a high, wide and dirty recovery. Maintenance inspection subsequently revealed a dirty air regulator which affected the bleed air entering the hydraulic reservoir, allowing the hydraulic pumps to cavitate.

F-14 Roll After Launch. Commander Tom Terrill, CO of VF-14, had just saluted the catapult officer. He and his RIO, Lt. Craig Kain, were ready for another combat air patrol mission in support of the U.S. multinational peacekeeping force off of Lebanon. Their F-14 Tomcat, at 67,000 pounds gross weight, had a full combat load: one Phoenix, three Sparrows, two Sidewinders, 500 rounds of 20mm and two full aux fuel tanks. Down the cat in zone five after-burner. Unexpectedly, the aircraft yawed violently to the left. Years of NATOPS training on boldface emergency procedures paid off. "Uncommanded roll/yaw" procedures were automatically performed. Terrill continued to climb and accelerate the airplane while Kain backed him up with the PCL. After checking his instruments, Terrill noted that the left rudder had failed hard over to the outboard position. This was quickly confirmed visually by his RIO. Following a climb to altitude and a landing configuration controllability check, the crew advised the ship that a safe approach could be made at on-speed AOA. After dumping down, Terrill flew a perfect OK pass to a trap. What could have resulted in the loss of a valuable fighter or its crew was now a maintenance troubleshooting problem.

E-2 Beats Adversity. On a high TACAN approach to NAS Miramar, Cdr. Dandalides of VAW-1285 and Lcdr. Herrel of VAW-88 were passing 9,800 feet MSL inbound when a loud explosion shook their Hawkeye. Herrel immediately checked flight controls to ensure the aircraft was flyable. Both pilots were aware that the port fire warning light was illuminated. Dandalides pulled the fluid cutoff handle to secure the engine and checked outside for visual indications of a fire. Herrel declared an emergency and continued inbound to the field while Dandalides activated the fire extinguisher. The fire warning light remained illuminated. With the "one shot" fire extinguishing agent expended, Herrel increased the rate of descent to accelerate the aircraft, attempting to blow out the fire. Dandalides again checked visually for indications of a fire and completed the post shutdown checklist. Herrel readied the E-2 for an arrested landing at NAS Miramar. All checklists were completed and Dandalides made a flawless arrested landing. Postflight inspection revealed that a turbine spacer had disintegrated, causing severe engine and nacelle damage. ◄

Two Points

By Tracey Teets
Safety Publications Staff

THE frigate pitched and rolled in the high seas as it readied to helo transfer its VIP to another ship in the battle group. The sea state cooperated momentarily with the planned operations: as the ship steadied, the SH-2F started to lift from her deck into cloud-shrouded skies, carrying a flag officer, his aide and a crew of three.

Just then, a 14 degree roll rocked the ship and the pilot accelerated his takeoff. Whining, popping and grinding noises escaped the No. 1 engine as the aircraft reached hover altitude and started to lose power. The helo began an uncommanded left yaw which the pilot allowed to continue in an effort to clear the ship.

Nine seconds after liftoff the helo was down, in the water, swamped almost immediately by 15-foot waves. The chopper's blades shattered as they hit the surface; water rushed into its fuselage in violent torrents as the bird rolled left and sank with sickening speed into murky seas.

A power loss to the number one engine at liftoff tasked the pilot with two chores that grim morning: avert a shipboard crash and maneuver a controlled water landing.

The five men escaped uninjured; 2,000 fathoms of ocean claimed the aircraft. This accident could have had a very different ending, however, and it only took the nine seconds between takeoff and ditching to prove to crew and passengers alike the value of a few hours spent in the 9-D-5 helo dunker — a contraption which simulates the water entry and roll of a swamped aircraft.

Rear Admiral Joseph Donnell, Commander Cruiser/Destroyer Group 12, was the flag officer aboard the SH-2F the morning it went down, and he attributes his escape

For the Dunker!

that day to the "valuable" egress training he attended to qualify himself as a passenger/crewmember in tactical aircraft.

"The training is very worthwhile," says RADM Donnell. "Knowing where you are in the helo and where the available exits are is critical, and those are things you learn to look for in the dunker."

Besides familiarity with exits, another tip stressed to dunker riders is holding on to a reference point — a move that's crucial to a successful egress from a swamped plane, especially one that's belly-up in the water.

"Once you let go, that's it, "said water survival training instructor petty officer Mike Graham. "Your natural bouyancy takes over, and if you don't have a hand hold you'll be sticking to tne deck, which is now the overhead. That makes it real tough to get anyplace — especially out."

Graham, who works out of the

Norfolk, Va. training site, explained the purpose of the dunker training offered to Navy, Army, Coast Guard and local medical emergency team flight crews.

"The point of all this is to install a reflexive action into people so they automatically know what to do when the helo flips. In a real accident, you don't have time to think through the proper action — you're upside down, disoriented and your nose is full of water. You need ingrained responses if you're going to get out."

Factors that often hinder aircrews from escaping a helo after a water landing include a sudden and forceful inrush of water, confusion, disorientation and darkness. Door and window releases, as well as safety harnesses, may stick at times and require special effort to free them.

Preparations for a ditching include bracing for the crash, holding onto a fixed reference point and locking the positions of the nearest exits into mind. Don't release safety harnesses until the rush of water into the aircraft has subsided, say the trainers — you're not going anywhere until that happens anyway.

"I was surprised by the force of the incoming water and my inability to move against it," recalled RADM Donnell. "But as soon as the helo was filled . . ., the water flow problem was eliminated and it was relatively easy to exit (through) the clearly visible door."

To get dunker riders used to staying put in their seats while their "aircraft" fills with water and rolls, the training requires they complete an eight-count, beginning when their faces get wet, before releasing safety harnesses and feeling their ways toward an exit. The eight-count simulates the time it takes for all violent motion and water rush to stop after a water landing.

"Never let go of one hand-hold until you have another," Graham stressed to one class of pilots. "*Feel* your way out of the aircraft — you're going to be disoriented and you might not be able to see. Get used to it now."

But, as RADM Donnell points out, as good as the training is, it's *not* 100 percent realistic, and trainees should be aware that an actual crash will involve much more violent motion and disorientation than they encounter in the controlled environment of the simulator.

"The dunker is made of expanded metal so that water invades its interior . . . uniformly from all directions," explained the admiral. "In a helo crash, water comes in very forcefully — through the very points passengers are striving to exit.

"The actual experience, the strength of the inrushing water is far above what you'd expect. That difference should be stressed in the dunker," he said.

Orderly egress from a submerged bird and training for a "swim-down" response also concerned RADM Donnell, as he reflected on lessons learned.

"Passengers should be advised not only of where the exits are located, but which exits, because of their seats, they should look to for egress should there be an emergency," he advised.

"Everyone scrambling for one exit — normally the one that is facing the surface — could preclude escape by some or all. A passenger must be prepared to push out a downward facing window that's underwater, and swim down to escape . . . . Since our helo rolled to port with the door up, that wasn't a problem for us. However, I've thought many times about what might have happened had the helo rolled to starboard. Without a "swim-down" response, the outcome could have been very different."

But even as it stands, the training is still valuable education for everyone.

"I really always thought the aircraft would settle straight into the water," said one young pilot after his run in the dunker. "I realize now it will probably roll, so I can plan on being upside down. They stress disorientation and *feeling* your way out of an aircraft here, and that's good. There's really no logic involved — staying cool is the most important thing."

And so the oversized oil drum painted olive drab continues to drop with its flight-suited crew into the pool with reverberating thuds. As it fills with water, the dunker flips surprisingly fast for its unwieldy size. After the dunker's total submersion, helmets begin bobbing to the surface, the faces they crown sputtering water and mild exclamations of surprise and triumph.

On the pool deck an instructor with a score card and clipboard awaits the riders. If they receive poor marks for taking an unassigned exit — usually the closest — out of the dunker, releasing their safety harnesses too early, peeking from behind their blindfolds or not pushing themselves clear of the exits, they take another run until they get it right.

"Some people are just in a big-time hurry in there," said Graham with a grin. "They want to get out fast, but that's just what we try to teach them *not* to do. If they stay calm, they'll all get out — and that's the bottom line." ◄

NATOPS in Combat

By Capt. C.W. Reif, USMC
VMA-513

NATOPS and safety! Fine for peacetime, but when the fighting starts, we can finally dump all these rules and do it like it should be done. Right?

This is a question they put to us in safety school. Much to my surprise, over half the class thought that this was true.

I figure about here, most of you will quit reading — that's too bad because you need to rethink this point for your own well being — both in peace and war. I put it to you that safety and NATOPS provide the means by which we will destroy the enemy. Without it, we're likely to fail.

Think about it — you're somewhere the night before a raid you're going to lead. You've received your brief. What now? Flight planning and out comes the NATOPS. Fuel legs — can we make it? Will we have to go high-low-high? What ordnance — what drag — do I need to light load? The next morning what's the weather-temperature-takeoff roll-abort speeds? All in accordance with NATOPS!

After liftoff — comm-out procedures — tactical maneuvering — all NATOPS!

What are the threats — how do you defeat them? Threat detection and appropriate response — all NATOPS!

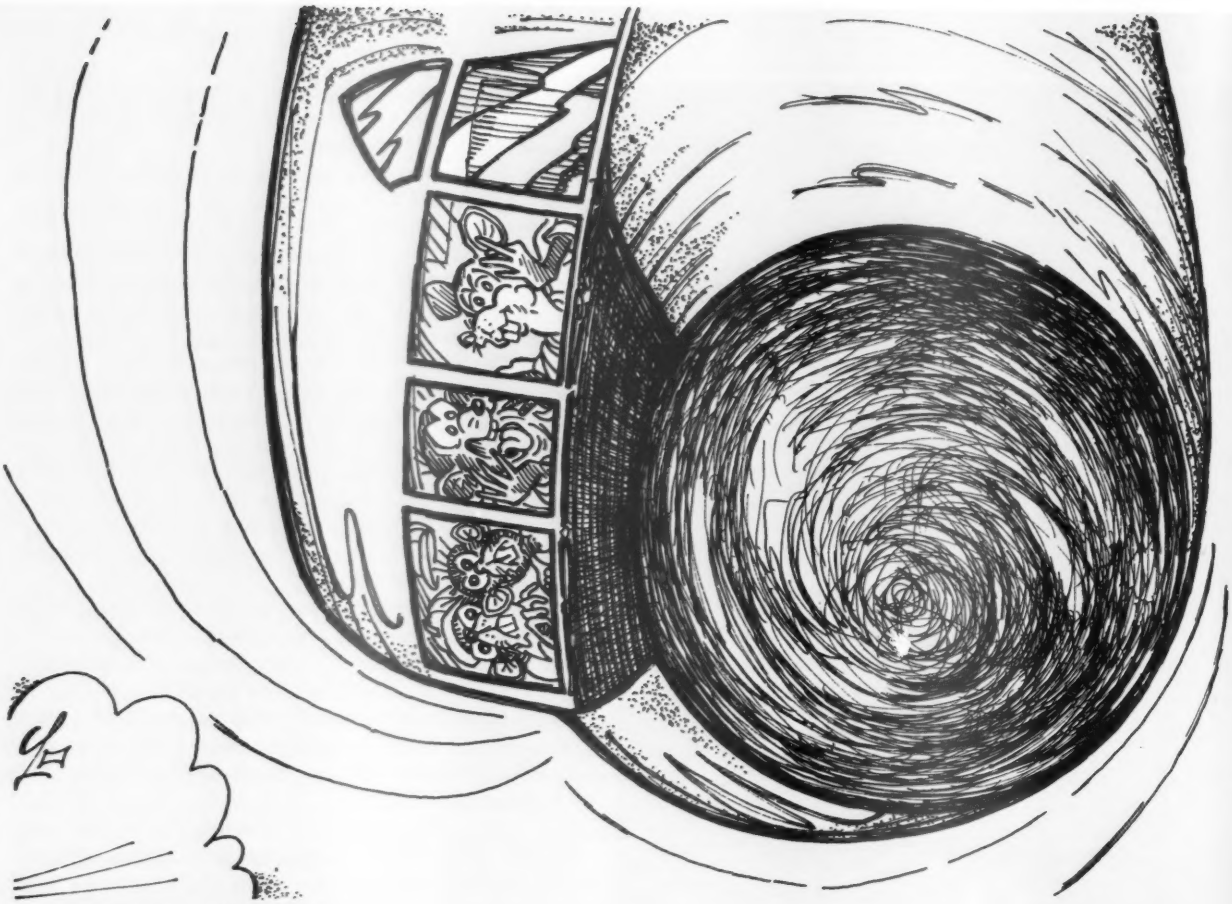
You're close now — in the pop — climbing to what ALTITUDE? What dive angle? Airspeed? You roll in — five seconds, you're in the heads-up display now. Make it count. Look at that flak — damn pickle, pause, pull, you're off — NATOPS! By the numbers, you hit the target. If not, you'll do it again! NATOPS!

If you're lucky, it's home — bang! What's that — the cockpit is lit up like a Christmas tree. Quick — what's wrong? How much time have you got? Do you jump now? Can you get one mile away — two, maybe three? Will it get you to friendly lines? NATOPS! Stick with a bad one . . . you're dead. Jump out of a good one and you might end up a POW.

Things are really bad — it's time to get out! Position, pull, chute's good, inflate, open seat pan, here comes the water — NATOPS!

You swim using DWEST (deep water environmental survival training). You make land and use SERE (survival, evasion, resistance and escape) school techniques. One of your helos finds you, picks you up, gives you first aid and flies you to safety — NATOPS!

It's all NATOPS and safety — it's taught, programmed, monitored — it's pushed — why? For harassment's sake? Hell no! So we can find, kill and evade the enemy. Your survival in combat is totally dependent upon NATOPS and safety — it provides the means by which *you* put *them* in the hurt locker! ◄



Adherence to NATOPS

It was a routine P-3 training flight consisting of two syllabus flights for PP2P students and a flight engineer checkflight. We were straight and level at 9,500 feet, 120 miles northeast of the field in a training area. The instructor pilot took control while two student pilots swapped seats. With only the IP at the controls, the right seat empty and the flight engineer's seat all the way back to allow the student change, the IP initiated a turn to port at a 90-degree angle-of-bank while descending. Then he turned starboard still in a 90-degree bank and descending. The instructor flight engineer shouted, "What the hell are we doing?" At that time the IP leveled the wings in a negative-G maneuver and stopped descending at 4,500 feet. All maneuvers were done smoothly and without undue stress on the airframe. The IP pointed out to the students that the P-3 "can be flown outside of NATOPS."

Such piloting "outside of NATOPS" parameters may occur from time to time. Pilots who do it contribute nothing to enhance naval aviation safety and, in fact, put lives on the line.

In the P-3 NATOPS, flight maneuvers are allowed with "bank angles to 65 degrees for roll maneuvers and 70 degrees for coordinated turns" (Section I Part 4) and "Maneuvering flight within the category of aerobatics is prohibited" (Section IV).

Commanding officers should emphasize that NATOPS is the standard for all operations and training. It should be strictly adhered to as put forth by the CNO Letter of Promulgation, "Compliance with stipulated manual procedures is mandatory except as authorized herein." NATOPSmouse

This appears to be the tip of the iceberg for P-3 NATOPS violations. Recent trends indicate other violations, i.e., flathatting, busting ATC clearances, not reporting two-engine out landings and directing pilots to fly a downed aircraft. — Ed.

ANYMOUSE

Prop Visibility

I have noticed that P-3 prop tips are difficult to see, especially at twilight, or during periods of low light. Currently, the tips on propellers are painted red and white, which are fine for daylight operations, but not for after dark. Therefore, I suggest that dayglo orange and white be tried as substitutes, especially on E-2, C-2 and SAR helos. I am sure E-2 final checkers would appreciate it as well as the man in the water awaiting a helo pickup.

Propmouse

The only way to work safely around prop aircraft is to avoid the area whether the prop is moving or stopped and whether you can see it or not. One thing is certain: If you never enter a prop area, you will never be hit by a prop. — Ed.

Mouse Led Astray

Night flight ops aboard the USS *Carrier* in the Med., I was attached to an HS squadron (SH-3s) as the power plants flight deck troubleshooter. Flight ops phoned the line shack and notified the supervisor that one of our helos was returning from an ASW mission for recovery on the port angle. The supervisor tasked one of our most experienced landing signal enlisted (LSE) petty officers. This LSE asked if an air crewman and I would help by carrying chocks and chains for tiedown.

The three of us headed out to the angle to await the recovery. Fixed wing aircraft were due to be recovered in an hour or so. But unknown to us, the air boss had changed priorities and had told our helo to stand off while an A-7 came in with a precautionary recovery. The air boss was trying to communicate with the LSE through the radio transceiver mounted in his headset but the "mickey mouse" was inoperative. I noticed flashing lights coming in aft of the ship but *assumed* the helo had decided to come across the fantail.

Suddenly, I heard the 1MC screaming to clear the angle. *That* was not our helo! At first we were confused. The message was repeated and we took off running. The A-7 did a touch-and-go, missing us by a few seconds.

Afterward, I asked the LSE if he knew the headset was down when he took it out to the angle. He replied he knew it was working intermittently but understood the routine and *figured he could handle it*. I never trusted him again and was glad to see him depart the Navy after the cruise. His decision to use a faulty mickey mouse was a significant contributing factor to the incident, reinforced by our *complacency* in relying upon everything being *routine* as usual.

Nearmissmouse

Cargo vs Planes

While being directed out of a parking spot by the lineman, we had to discontinue taxiing three times due to automobiles driving alongside the hangar. The drivers exhibited no regard for hindering aircraft ground operations, even with the lineman positioned almost directly in front of the cars as they proceeded along the "driverway."

I recommend that a sign be posted at the entrance to the flight line reading "Give way to taxiing aircraft." Speed limit signs are also lacking.

Taximouse

Sea Stories

By
Lcdr. Vern Jackson
VP-31

EACH aviation community is full of sea stories dealing with mishaps. Each of us has a bag full of "there I was . . ." stories that happened during our squadron tours. These sea stories play a significant role in the training process of newcomers to naval aviation. In fact, the way we train relies very heavily on this type of communication. Being considered a professional in this business implies wholehearted sharing with our shipmates —especially when it comes to safety. Major aviation mishaps naturally get the most attention, causing a "ripple-down" effect lasting for years and touching each of us. More often the incidents of lesser magnitude are soon forgotten except by those personally involved. But unless these lessons learned are shared with everyone, the lesson *really wasn't learned very well at all.* As time continues, it seems the same mistakes are made again and again, but by different people.

Safety-related sea stories are an inexpensive, readily available training resource. We enjoy telling them, which makes the message even more effective. To illustrate further, how often have we read about a mishap and brought it up as a topic of discussion in a group, only to realize no one else had heard of it? This situation is not all that

surprising when we stop to think how hectic the daily routine in the average Navy aircraft squadron is. Very few of the wardroom's younger members or the junior enlisted personnel read the squadron message boards or the safety files. Therefore, they miss the vast majority of printed safety material. In fact, we are more likely to find the average squadron member reading anything *but* official publications in his or her spare moments. So, realistically, if "safety messages" aren't passed on during an all hands safety standdown, they are primarily passed by *word of mouth* on the hangar deck or in the cockpit.

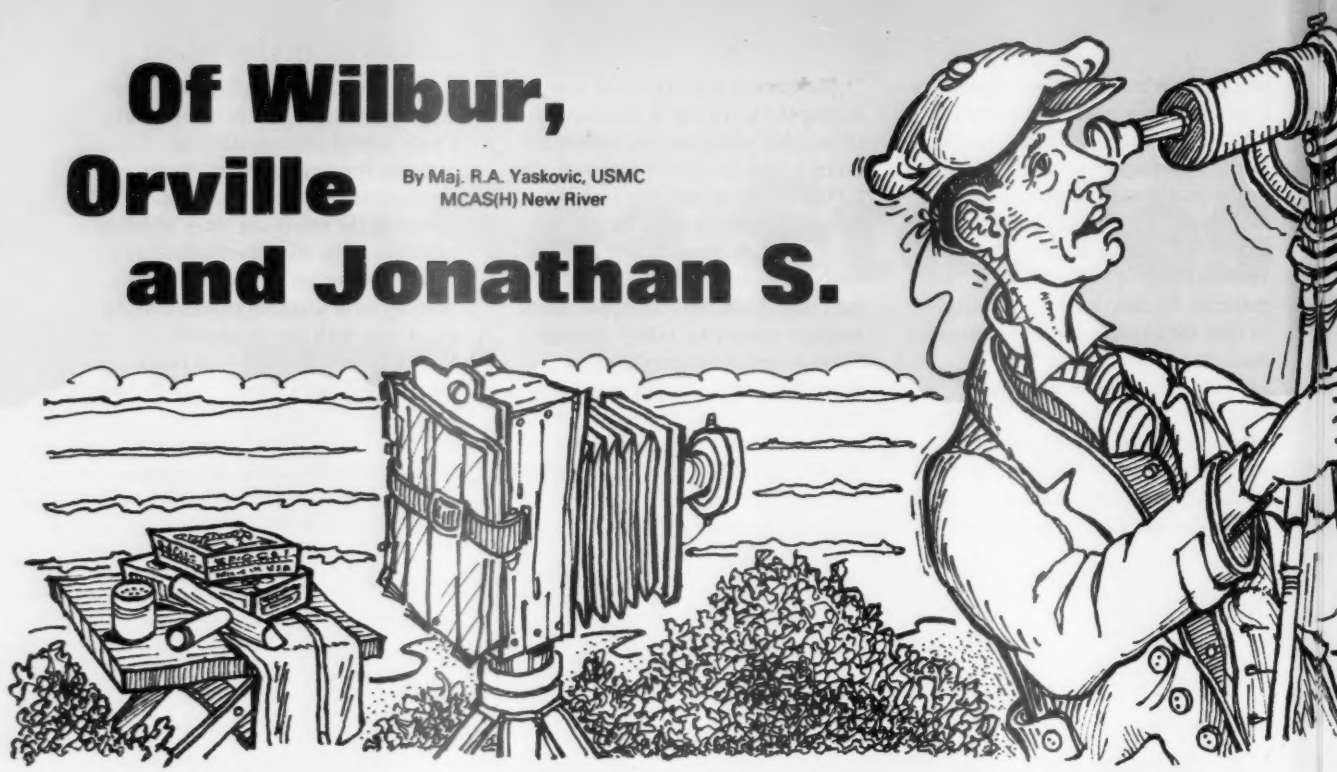
The beauty of a safety sea story during the work day is manifold. It often adds relevance and reason for doing a task in a particular way. One CPO told me he uses sea stories to break the routine when the work bogs down or things aren't going well. How the discussion gets started isn't important, but the opportunity to share some vital safety message is. Most successful supervisors are especially adept at informal communication of this nature. First-hand incident reports received from shipmates and Navy instructors have a profound impact.

Communicating the safety message is everyone's responsibility. The more experienced squadron personnel have a very special responsibiilty in ensuring the word gets out. Every means available must be considered, including the safety sea story which is probably most often overlooked as a safety mechanism. We are all made safer by both listening to and sharing sea stories with our shipmates. SHARE THE WORD — it really works!

A plug from the editor: Have your sea stories published in Approach and share the word with 75,000 of your shipmates!

Of Wilbur, Orville and Jonathan S.

By Maj. R.A. Yaskovic, USMC
MCAS(H) New River



THE North Carolina coast is recognized as the birthplace of powered flight. Wilbur Wright arrived at Kitty Hawk September 13, 1900, to conduct experiments in "scientific kite flying." An in-depth study of soaring birds led the Wright Brothers to believe that if birds' wings could sustain them in the air without the use of any muscular effort, man could be sustained by the same means. They were sure the secret to successful flight would be found in an effective means of flight control.

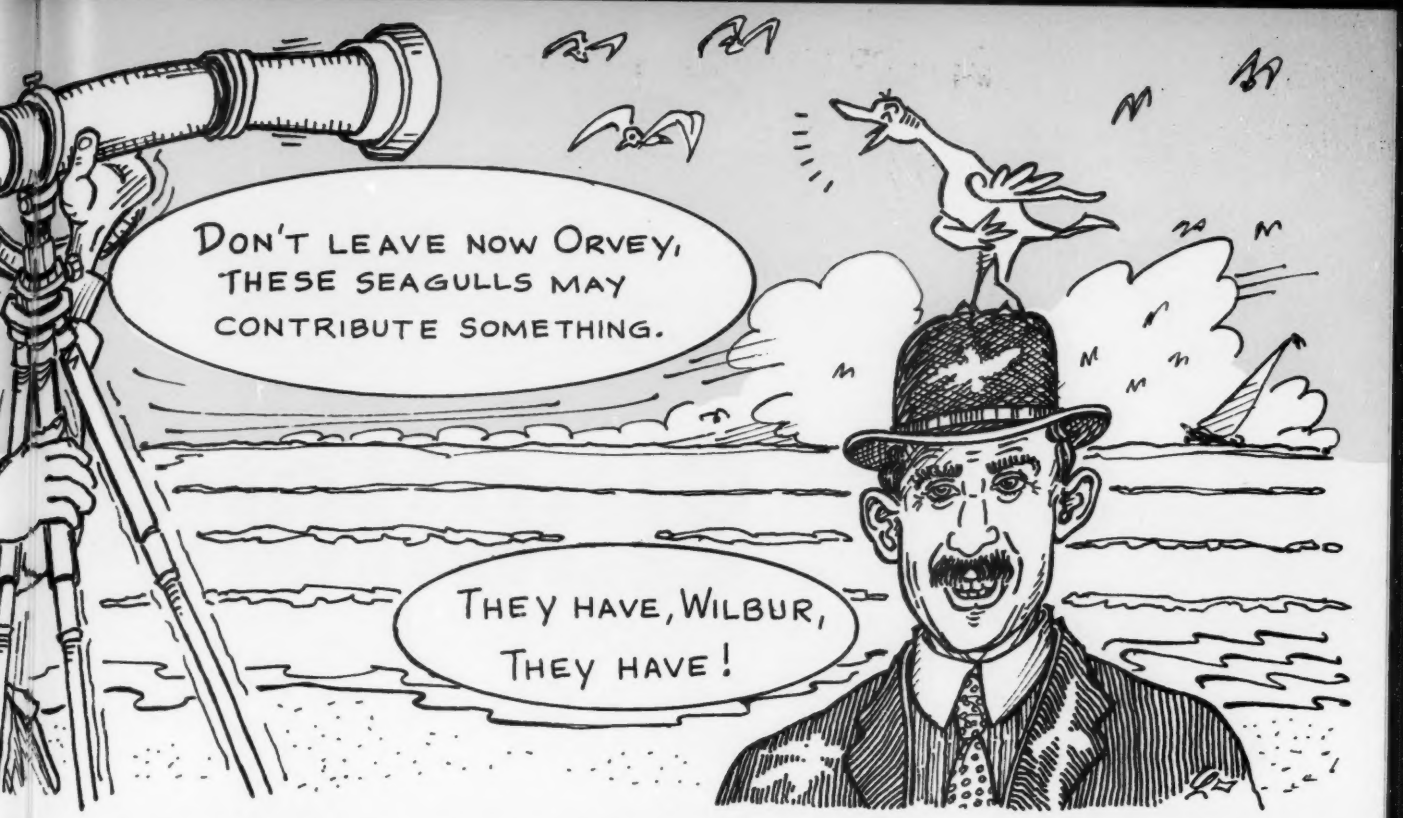
Their series of glider experiments, based on hours of observing birds through field glasses, photographic analysis of wing movements and rudimentary wind tunnels eventually led to the development of a vertical stabilizer and wing warping for lateral control which led to this first successful powered flight on December 17, 1903. The seagulls were watching. One wonders whether Orville, in the excitement of that first flight, gave even a passing thought of the consequences of a bird strike as he plowed through the air at 10 feet per second.

Eighty years later, the descendents of the birds which so inspired the Wright Brothers are still with us. Along the coast we now have numerous air facilities that are used by technologically advanced descendents of the Wright flyer operating at much higher airspeeds. The birds have changed little in the same time span; they fly at approximately the same airspeed. However, the same birds that provided inspiration for man's flight are now regarded as a hazard to aviation.

MCAS(H) New River historically has had a large seagull population which has accounted for many of the reported bird strike incidents. In March 1984, Approach ranked New River as number nine in a list of 25 air stations with 24 strikes between 1 January 1981 and 31 December 1983. New River's past efforts at seagull control have been met with dubious results at best. Under license, gulls have been shot and poisoned; carcasses have been distributed around mat and runway areas as a deterrent. Trash dumpsters have been secured, feeding prohibited and gulls fired at with air-burst noisemakers. USAF BASH (bird aircraft strike hazard) gull distress tapes have been used in an on-going program. As the gulls became accustomed to or unafraid of one technique, the program routine was changed. Soon, familiarity with a new method would breed the all-too-familiar seagull contempt. At best the birds could be moved from one part of the facility to another further from the active runway. They exhibited little fear of taxiing or flying aircraft and, despite the various scare tactics, seldom left until they were ready.

Wilbur and Orville observed birds and gulls and learned to control flight; maybe they could again be observed with the goal of controlling them. Why were the gulls attracted to New River? Obviously, it was a great place to fly but there must be more. The gull population was at its height during periods of low ceilings and poor visibility. After much thought, observation and frustration, the answer started to evolve: They slept there; it was their roost!

All day long there were a few "stragglers" about the facility, but prior to sundown, they would arrive in droves, landing about the field. Seagulls are a species of waterfowl.



Having webbed feet, they can't nest in trees or on power lines and, therefore, are restricted to roosting on the ground. Thus, they are easily subject to predators. Like most species of birds, except for owls and some hawks, gulls have poor night vision. As the sun set, the birds migrated in short flights or walked to the well-lighted mat areas in front of the hangars. The tarmac retained warmth from the day and the security lighting of the large open areas provided security and easy detection of predators. By darkness they would be massed wing to wing in one to three flocks per ramp, numbering in the thousands.

As morning approached, the flocks would slowly disband. Even when harassed by the BASH tape or noise-makers, they would fly about but were reluctant to depart the field until about 20 minutes after sunrise, well after flight operations had commenced, thereby creating an unhealthy flight environment. The mats would be littered with feathers, feces and regurgitated pellets of undigested bones and food that created the additional hazard of FOD. The majority of the gulls would depart by midmorning, only to return again at sundown. The cycle was unbroken except for periods of bad weather. If the gulls started arriving at midday, for example, a check with weather would assuredly reveal an impending frontal system. The gulls would remain day and night as long as the weather persisted. The gulls would not actively fly during IFR conditions but would loaf around on the runways or fly up in front of aircraft on takeoff or landing roll. A wise procedure for all aircraft prior to takeoff was to back-taxi down the runway prior to takeoff to clear a path. Further, fixed wing aircraft generally used flaps to get above the gulls as quickly as possible.

Well, where did all this nature study lead? Those of us who have hunted wild turkey know the cardinal rule; don't hunt the roost or you will ruin your sport as the flock goes elsewhere. New River has incorporated a non-lethal and inexpensive predator, the Nightstalker M-1000 crash truck. A couple of hours after darkness, the truck approaches the flock, or flocks, of securely sleeping gulls and with siren wailing hits the flock with the 500 gal/min water turret. The terrorized birds are blown about and forced to fly about in darkness. Returning in the pre-dawn hours, the crash truck repeats the process on any of the flock who have regained composure and walked back to the mats. After the third day of insomnia, the gull population dwindled to a handful of hard-chargers who eventually got discouraged and departed within a week. Instituted in late February, the program has been very successful, virtually having eliminated the gull problem. Currently, if a few gulls do arrive, they are allowed to group and are then attacked. After a bad night they are anxious to depart at first light, well prior to initiation of flight operations.

While this article is not written as a guaranteed answer to all seagull problems at any other airfields, utilization of the "Nightstalker crash truck" may significantly reduce your gull population. The idea is hunt the roost, be it the runway, PX parking lot or the nearby dump; and then create insomnia and insecurity. ◄

Ejections

Always Be Ready

By Peter B. Mersky
Approach Staff

THE Crusader driver settled into his seat, made one final tug on his harness and, turning his head to the catapult officer, popped a salute. The cat officer waited, timing his movement, and then swung his arm for a few seconds. In one swift motion, he dropped to the deck, and seconds later, the cat fired, thrusting the RF-8G down the track. It seemed like a fairly normal shot to the lieutenant commander pilot until just after clearing the bow, the plane started an uncommanded starboard roll. Surprised, the pilot spent a few precious seconds trying to right the aircraft which had reached an 80-degree right bank with the angle-of-attack meter approaching the 12 o'clock position. The control stick shuddered as the Crusader rapidly approached a full stall, hanging on its big wing barely 100 feet above the Mediterranean.

In the next few milliseconds, it became clear to the pilot that there was nothing to do but get out. With a move he had practiced repeatedly, he brought his hands up to the primary face curtain rings and pulled. The seat fired properly, but because of the low altitude and steep bank, the aviator was actually outside the envelope of the seat. The chute barely blossomed before he was deposited in a nearly horizontal attitude in the water. He was very fortunate; by rights, he should have died. As the carrier sped by, the helicopter approached to pick him up.

There's the old saw which says: There are two kinds of pilots, those who have ejected and those who will. Kind of frightening, put in those terms, but if you make your living as an aviator in tactical aircraft, chances are you spend some of your time thinking about the possibility of having to leave your aircraft in flight. A possibility that at best gets you a one takeoff/no landing logbook entry, and a little caterpillar pin on your lapel. However, because you want to fly and have supreme confidence in yourself, you manage to put any awkward feelings in the back of your mind. That's okay. No one wants you to become so incapacitated with apprehension that you can't fly your aircraft. But situations do come up, and it is best to prepare for them BEFORE they happen.

For instance, take the aforementioned Crusader pilot. Even though he had a lot of F-8 stick time and a combat tour (seasoned with a SAM or two) under his belt, he still had the sense to rehearse for the possibility of an ejection. When the time came, he was ready. It is distinctly possible that although he did not have even one full swing in his chute, had he not known where those rings were above his head, he would have spent precious milliseconds searching for them, thereby losing the razor-thin edge with which he left the aircraft. Time was just barely on his side. "The aviator should always be mentally prepared," he said later, crediting his safe return to his constant rehearsal. (The time from the moment the plane began to move down the track until he entered the water was merely eight seconds!)

Knowing *when* to go is just as important as knowing *how* to go. And how do you know when it's time to step out? There are many inputs to a decision to eject: visual, individual assessment, outside observation from your wingman, seat-of-the-pants, or even the Air Boss.

Another Crusader story. (This is not to indicate that F-8s have more than their share of ejection mishaps; the author has just spent a lot of time in that community, that's all.) A squadron had deployed to the West Coast for a week's CQ. After a few days of constant duty on the LSO platform, the squadron maintenance officer, an acknowledged tiger and all-around good stick, was ready to fly. He hot-switched with another pilot and launched, bringing his aircraft around and behind the carrier. He had been cleared for a low

pass up the port side — for morale purposes. (The troops had worked long and hard to keep their ancient birds going, and a hot pass is always a crowd pleaser.)

The Air Boss cleared the RF-8 for the flyby. The pilot set himself up and began his run. About one-eighth mile astern, the Crusader was seen to begin porpoising, with pieces flying off. As the aircraft rocketed past the ship, its speed well over 500 knots, at an altitude below 100 feet, the Boss shouted "Eject! Eject!" As a trained LSO with many years of responding immediately to commands and situations, the pilot apparently reacted to the call and punched out, well outside the seat envelope. He hit the water without a deployed chute and was at least knocked unconscious, if not killed outright. When the helicopter got to him, his chute was so filled with water, there was little the swimmer could do to pull him out. The Navy lost a valuable young pilot and officer.

After the time had elapsed to conduct an investigation and for his fellow squadron members to consider the tragic mishap, several expressed the feeling that had the pilot stayed with the stricken plane longer to bring the Crusader up a few hundred more feet, he would have given himself a better cushion, and *perhaps* would have survived the high-speed ejection. If only he had waited just a bit.

Two F-4s launched from catapults 1 and 2, on the bow. The second Phantom, off cat 2, started emitting flames, whereupon the Air Boss transmitted, "Off the bow, off the bow, you're on fire! Eject! Eject!" The crew for whom the call was actually intended — the plane on fire — successfully ejected. Unfortunately, the first Phantom crew who had a

perfectly good aircraft around them also punched out without any attempt to verify that an emergency existed. The willingness to abandon an aircraft without a reasonable indication of trouble, simply on the call from the Air Boss who naturally exercises quite a bit of authority and who had a recognizable voice filled with urgency, is a subject to ponder.

When DO you eject? When do you make the decision to leave your multimillion dollar aircraft, consigning it to oblivion, and perhaps exposing yourself to other dangers? When you come right down to it, no one can adequately answer that old question, not even yourself. There are all sorts of variables which come into play. A Weekly Summary article said, ". . . the timely ejection option, once selected, becomes irrevocable. There must be no compromise of the principle of life through ejection by delaying the ejection decision too long . . ." (11 Sep 82).

The crew manned their aircraft for an early evening launch. Everything seemed fine; the crew had conducted a proper brief and preflight, and the plane was properly connected to the catapult. The pilot saluted the cat officer and the stroke was initiated. Halfway down the deck, the RIO noted the stroke to be somewhat softer than usual, and two-thirds down the track, the Phantom rotated so drastically that its stabilator contacted the deck.

There was an explosion at the end of the track — the water brake cylinder had shattered — and moments later the F-4 left the deck with below minimum flying speed. (It was later theorized that the water brake cylinder had FODded the port engine.) As the crippled aircraft began a dutch roll, and the Air Boss called for the crew to eject, the RIO initiated command ejection. The RIO's ejection was successful, however, the pilot was lost; his seat left the aircraft but well outside the envelope. He struck the water and was probably incapacitated.

Did the crew wait too long — we're talking microseconds — to initiate ejection? It's too close to call. But a lot of catapult ejections are. If, somehow, the pilot had been able to hold the aircraft off long enough so that he and the RIO could make a controlled ejection, then perhaps he might have survived. But he did not have that option. If the seat had a vertical-seeking device, he might have had a better chance, too.

In a combat situation, things are different; stress factors, immediacy, as well as the actual geographic point of ejection come into consideration. During Vietnam, many crewmen elected to stay with their damaged aircraft much longer than perhaps advisable, in an attempt to get their planes over the water, rather than punch out over land where their chances of capture and imprisonment were infinitely greater. One example is Randy Cunningham's and Willie Driscoll's last flight on May 10, 1972.

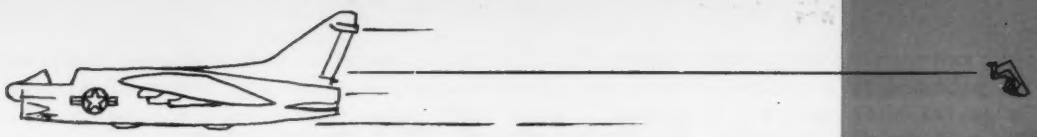
They had been part of a large alpha-strike and had shot

down three MiG-17s. This feat put them into the record books as the first Vietnam aces. However, coasting out after their last kill, their Phantom was hit by a SAM. The PC-1 and PC-2 hydraulic systems were hit and for a moment it looked as though they might have to eject over extremely hostile territory. Cunningham remembered another aviator's story which had appeared in an Approach article, and by using that quickly recalled information, he alternatively rolled and ducked his F-4 out over the beach —a distance of 15 miles — where he and Driscoll ejected. They were rescued by helicopter under intense fire from the shore. (It was a hectic day for all.)

In this case, the point is, one, the pilot and RIO waited — of course, they were *able* to wait — and, two, the pilot recalled additional advice which enabled him to hold the plane a little longer until a satisfactory ejection location was reached.

In all these examples, one could rightly ask: Was the crew as prepared as they could have been? Had they rehearsed in their own minds — and then briefed each other — the circumstances under which they would eject? A recent CTF-77 message is worth quoting.

"When would you initiate ejection from your aircraft? Almost all of us have thought of scenarios under which we would eject. No one can cover all possible situations that might require ejection, but the fact that you have in your own mind circumstances under which you would eject might make the difference between life and death." ◄



Just Another Ejection (A "sequel" to Just Another Flyoff from our June/July '84 issue)

By Cdr. P.C. "Paco" Campbell
VA-146

WHAT is the most difficult thing about ejecting? Deciding when to actually do it, you say? Well, maybe, but take it from me, I've done it twice and once you pull the handle, stand by!.

There are still plenty of hard decisions left. The problem is, no matter how many times you go over the anticipated sequence of events in your mind, it just doesn't seem to work out the way you had expected. Heresy you say? Nope! I totally support the game plan approach as well as "what if'ing" your brains out over possible contingencies. They unquestionably reduce your reaction time and increase your survival probability. However, my experience is that things don't necessarily happen the way you would expect. Let me give you a firsthand example.

I had an engine failure and went through seven flameouts and six relights but could not sustain idle RPM without the engine temperature going out of sight. At 6,000 feet I decided to walk home. I leveled the wings, slowed down, established a gradual climb and squawked emergency. Then I lowered the ejection seat, got my back straight and heels on the deck. I reached up, grasped the primary ejection handle, elbows in, and pulled down.

What, you say! I forgot to lock my harness? You bet I did. And guess what, the A-7E doesn't have an auto retraction feature on the inertia reel. I thought, "So what? Here I go — boom. What the hell — no chute! They always told me I would be in the chute before I knew what was going on!"

Guess I better peek out from behind this face curtain to see what is going on. Holy cow! I'm tumbling. I must not have gotten automatic chute deployment after seat pan separation. Pull the "D" handle. Pop, chute deployment. Ugh, What the! Holy two sticks! I've still got the seat strapped on. Pull the seat release handle and away it falls.

Yikes, the chute is ripping. One, two three, four gores ripped out, two more tearing as I watch! Wow, I'll sure be glad to get down to that cotton field. Damn, I can't breathe; no emergency oxygen. I've got to get this mask off! Whew, that's better! Holy mackerel, that tearing chute is scaring the pants off of me. Well let's see: release the seat pan, keep the feet together, bend the knees, prepare to release the Koch fittings. Touch down, roll on your side. Ok, it's over! I made it!

Where did the problems start? Not locking the inertia reel allowed me to instinctively pull my knees up to my chest and bend forward into a ball. Weightlessness of the free fall gave me no indication that the seat was still attached to my butt. So I mistakenly thought I had seat pan separation but no automatic chute deployment. Actually, I was still firmly attached to the seat.

Another problem was not realizing that the face curtain must pull free for you to be separated from the seat. The curtain should come completely free so you can throw it away.

If you are below automatic parachute deployment altitude at ejection, then beat the seat! Instinct may encourage you to close your eyes, or faith may encourage you to momentarily seek refuge in quiet prayer but, brother, you better get busy and beat the seat!

How did the chute get ripped? Well, when you are bent forward and pull the D ring, out comes the chute, catching on the seat as it unfolds. Rip! Hey, this was the original four-line release! I'll tell you what, watching those gores rip as you descend is the thrill of your life!

What about the oxygen? A small elbow on the mask at the mini-regulator broke, so no emergency 02.

Well, it all ended okay as I walked out of that field looking for a ride back to the base, but anything can happen. The best way to minimize the learning curve is to practice what you need to execute both mentally and physically. A game plan is a must. But be ready for anything. Think, think, think and act. Don't be an observer in the "save-your-life" game. Be an active, concerned and motivated participant!

Defensive Flying Needs Offensive Action

By Cdr. G.H. Spaulding
VT-28

TO some, "defensive driving" may conjure up images of a timid, overly cautious and passive "Mr. Milktoast," driving tentatively down the road hoping not to get hit by an "offensive driver." But, anyone who has taken a defensive driving course should have learned that good defensive driving requires a number of positive actions — a good offense if you will.

When driving through a residential area, for example, you learn to scan the underside of cars parked along either side of the street to spot the little legs and feet of a small child who may be about to run in front of your car and who otherwise is not visible.

These courses also teach us, among other things, to approach every intersection assuming that a crossing vehicle is about to run the red light. We learn to keep our "head on a swivel" nearing intersections so we will be able to see and avoid that vehicle even though we have the legal right-of-way.

Compare two drivers, one who is applying these techniques and one who is not. It's readily apparent that the driver who is taking positive defensive actions, in this case a more active scan, is less likely to have an accident than the driver who is not taking these extra steps. He is also probably driving a little slower as well so he won't "overdrive" his scan. The other fellow is simply motoring along, with "tunnel vision," clouded in a false sense of security. His accident potential is much greater.

The positive-action approach inherent in good defensive driving also applies to flying safety. How often have we been encouraged to "think safety"? It's a good idea as far as it goes, but a fairly meaningless exercise unless we go beyond thinking safety and actually do something about it. Frequently we are offered reminders of things to avoid. "Don't make a gear-up landing" is such an example.

Imagine during a round of golf standing on the tee of a hole with an out-of-bounds tight on the right side. Preparing to hit your drive, you think, "Don't hit it out-of-bounds, don't hit it out-of-bounds, don't hit it out-of-bounds." Guess where your tee shot will probably wind up. Instead, you should pick a target away from the out-of-bounds, adjust your setup accordingly and *concentrate on the positive* actions you must take to hit the ball on the intended line. Picking a target, taking positive action — that's the key.

Now to apply the positive action principle to ensure the landing gear is down for landing. One idea comes from Jay Beasley of Lockheed, who has ridden "shotgun" through more than 50,000 P-3 landings with Navy VP pilots. He suggests the copilot should place his hand on the gear lever at the point the gear would normally come down and keep it there until the handle is down. If the gear is held, no matter. The copilot's hand stays in place until it has lowered the handle. By doing so, the copilot has taken a positive action in addition to that normally initiated by the pilot (by calling for the gear) to help ensure the aircraft is in the correct configuration before touchdown.

Another cockpit technique Beasley recommends has to do with checklist execution. On the command, "hold the checklist," the copilot should literally hold the checklist, with his thumb on the stopping point, and should not put it down until the checklist ultimately is completed. Again, a positive action that could prevent a proverbial "bad afternoon."

Here are a few other positive actions which you might want to consider adopting for your own use:

- Airspeed check on takeoff. At a predetermined speed comfortably below refusal/rotate but high enough to ensure a meaningful indication, compare the pilot's and copilot's airspeed indications. The copilot should call out the designated speed on his airspeed indicator, at which time the pilot should check his. If they don't agree, abort. This positive action could prevent a takeoff with a faulty or clogged pitot

static system, particularly in icy conditions.

• In IFR (instrument flight rules) conditions, your IFR release contains the following instructions: "Wind zero three five at one two, switch to departure control, cleared for takeoff." The appropriate positive action here is to switch to departure control before takeoff as instructed, as opposed to switching in the climb — a common practice under VFR conditions. Switching prior to starting the takeoff roll in IFR conditions increases the time the copilot has available to remain on the flight instruments as a safety backup to the pilot at a time when he is most vulnerable to vertigo.

• Practice ITOs (instrument takeoffs) in VFR (visual flight rules) conditions. An ITO should not be done "hooded." It cannot be practiced in a simulator which is not visually equipped. Being able to see the runway is necessary to practice the inside-outside-inside integrated scan which transitions to an all instrument scan at rotate. The positive action here is to remain proficient at performing ITOs to reduce your chances of a sudden attack of vertigo on an IFR or night takeoff.

• When reducing power to commence a descent, call out the altitude to which you are descending. No matter how comprehensive the approach brief, call out the "target" altitude again as a reminder to ensure both pilots are of one mind about the intended level off or missed approach point.

• Instructor pilots should maintain the basic "defensive position" — feet cocked just in front of the rudder pedals to detect wrong rudder application by your students and, if necessary, prevent hard wrong rudder. One hand should be cupped around the yoke. Let the student fly, but be ready to assume control quickly. The other hand should be behind or in front of the power quadrant (not at the base of the levers, but at the top so you are not at a leverage disadvantage). Expect the unexpected, no matter how well your student has performed previously. If he has lulled you into dropping your guard, you are in a dangerous situation already.

Think of additional positive actions which other pilots might want to incorporate into their flying repertoire to become better defensive flyers. Add them to this list. Remember, it's OK to be defensive. It may save your life.

One Moment of Inattention

By Cdr. Bob Thomas
VF-2

"YOU just sucked a man down your starboard intake." One of the most fearful incidents in naval aviation had occurred, and miraculously the plane captain trainee sustained only minor bruises. What were the events that preceded this near tragic accident?

It was the second day of an eight-day exercise, and the squadron had been conducting operations around the clock against unfriendly surveillance aircraft. The temperature was 32 degrees, a drastic change from the warm weather of the Philippine and South China Seas we were used to, making lectures on hypothermia and proper flight deck clothing mandatory. Airman Jones and Airman Smith (the names have been changed) were assigned by the night shift line supervisor to complete servicing the squadron's F-14s on the flight deck. Servicing complete, Jones returned to the line shack and Smith remained on deck to complete a daily inspection on another aircraft.

When Smith failed to return in a reasonable amount of time, Jones became concerned about his shipmate's welfare. Unable to locate Smith on the flight deck, Jones feared the worst, that Smith had fallen overboard into the cold water. It was at this point that Jones began to divert his attention away from the evolutions taking place on the flight deck; aircraft being respotted, engine turnups for maintenance and setting the aircraft alert posture. When Jones saw a light in the water, he was convinced it was a man overboard, perhaps his shipmate. He reported it to flight deck control and the CAG maintenance chief. And several others got a fix on the light and found it to be a fishing bouy.

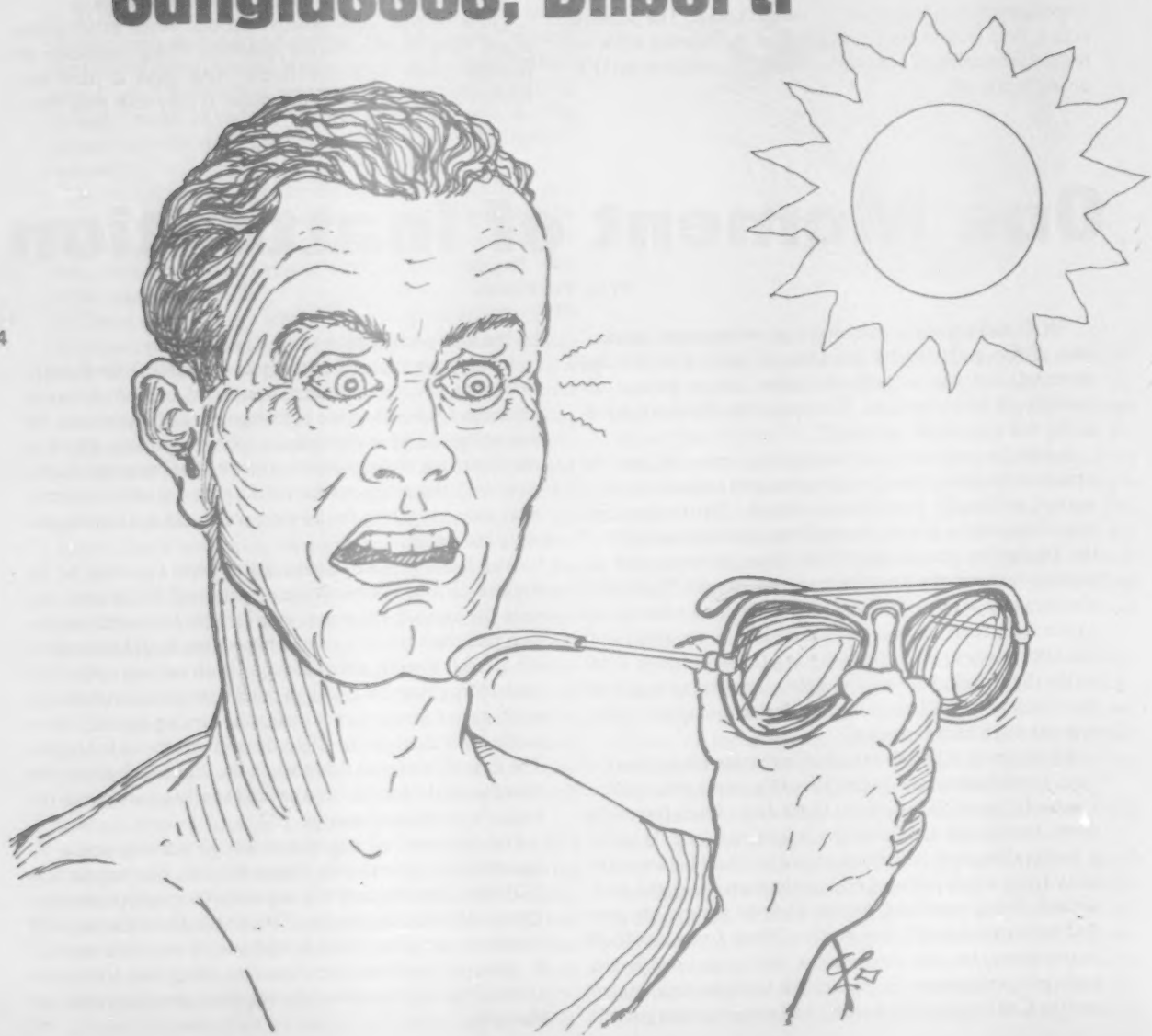
Jones, however, had become preoccupied with the thought that there was a possible man overboard, and he continued to search for Smith in the berthing area and messdecks. *He was so engrossed in this opinion that even finding Smith in the line shack did nothing to dispel it.* A subsequent discussion with the maintenance chief and a squadron aircrew, who were preparing for an alert watch, also failed to alleviate his anxiety.

Was Jones mentally ready at this point to return to the flight deck where aircraft were operating? He stepped out onto the catwalk and was so engrossed in his earlier conviction that there was a man overboard that he did not realize the aircraft directly above him had both engines operating. He had forgotten his flashlight, and he was in total darkness as he started forward underneath the turning aircraft. Not a single individual on the flight deck observed the ingestion. The aircraft was shut down when the flight deck alert crew heard several "thumps" and noticed sparks coming from the engine's compressor section.

One moment of inattention to the activity going on around him almost cost Jones his life. The engine was FODded, but engines are replaceable. Sailors are not. Everyone hears the phrase, "The flight deck of an aircraft carrier is one of the most dangerous places in the world." It takes an incident like Jones' to bring this truth into focus. Jones got a second chance. He is the exception, not the rule. ◄

By Lt. David M. Kennedy
VA-27

Better Get Rid of the Cheap Sunglasses, Dilbert!



AS naval aviators, we like to look good. We're also very interested in protecting our precious assets; our "family jewels," so to speak. That's where a solid safety program, thorough preflights, steel toes, NOMEX and sunglasses come into our lives. Sunglasses? Yes, *sunglasses*. They protect our eyes while producing that unmistakable look that civilians are always trying to copy. But — be honest — how much do you *really* know about your favorite shades? You wear them as much off the job as on; yet, you probably know very little about what they're designed to protect you against or exactly how they do it.

First, a little aviation physiology. The sun can do some bad things to your eyes. The known mechanisms of damage are glare, ultraviolet radiation (UV) and infrared radiation (IR). *Glare* is the amount of visible brilliant light your eyes have to handle, such as direct light on a sunny day, reflected light from snow or water, or the blinding light from an F-14 burner cat shot at night. Glare can be discomforting or disabling, normally interferes with vision, and individuals have differing sensitivity to differing glare intensity levels. *Ultraviolet* rays are invisible, potentially harmful and increase in intensity with an increase in the level of visible light. UV radiation is the principal cause of high altitude snow blindness and is linked with development of cataracts. *Infrared* rays are the sun's heat rays, are also invisible and are a potential cause of retinal burns and blindness — (one of the reasons for the warning not to look directly into a solar eclipse even when wearing dark tinted sunglasses). The cumulative effects of glare, UV and IR radiation are fatigue, discomfort, squinting, tearing, distraction and a loss of night vision and dark adaption. Concerning dark adaption, the American Optometric Association counsels that "people who spend an entire day in bright sunlight will not regain their normal night vision even after a full night. Those who spend every day in the sun may require from *several days to two weeks* of non-exposure to totally regain their normal night vision."

Ideally, sunglasses should provide protection as well as comfort for the wearer — in our case, the intrepid naval aviator. The rugged, stylish look is just one of the fringe benefits of choosing the "right profession." In flight, the tinted visor, alone or in conjunction with issue sunglasses, works with canopy plexiglas (a UV shield) to provide the required protection. On the ground or at the beach, sunglasses and informed good sense do the job.

The major types of sunglass lenses available are *constant gradient, polarizing, photochromatic, reflecting* and a combination of the previously named types. *Constant gradient* or *tinted* lenses are fixed in color and the amount of ambient light they allow to be passed. They come in various colors, the most popular being gray, green, brown and amber. Although the color of the tint has no effect on the lens' ability to block or absorb UV rays, it does affect the lens' ability to absorb IR rays. The lens' color also affects color perception. *Polarizing* lenses absorb some of the light rays reflected from horizontal surfaces, especially water, snow and sand. Their glare-reducing effectiveness depends upon the light-to-lens angle of incidence. *Photochromatic* or *changeable* lenses are made of light-sensitive glass which automatically adjusts in density to the level of brightness. Most depend upon UV rays to trigger the darkening reaction. *Reflecting* or *mirror* lenses are tinted lenses with a thin metallic coating applied to further reduce light transmission. The coating may be applied to the entire lens or only to the top and/or bottom to combat intense overhead and/or reflected glare.

The only sunglasses authorized for inflight wear by Navy aircrews are the familiar "FG-58" (Flight Goggle 58), introduced in 1958 by American Optical and equipped with neutral gray lenses that block all but 12-18 percent* of the ambient light. Neutral gray lenses are stipulated because they don't distort or change colors as most colored lenses do. All things considered, the FG-58 is an excellent pair of sunglasses (see chart). Polarized lenses are specifically not authorized for inflight wear due to the possibility of blind spots caused by the cumulative polarizing of canopy/windscreen, visor and sunglass lenses. Photochromatic lenses are not authorized in flight because they are not considered dark enough, even at their darkest, to provide adequate protection. Lenses whose changing density depends upon UV rays are also hampered by the canopy's absortion of UV rays.

Although naval aviators are encouraged to shun commercially obtainable sunglasses in favor of the FG-58, a simple glance around any naval air station will show a wide variety of sunglasses, most of which are excellent. Some, unfortunately, don't provide the wearer with adequate protection and may be potentially dangerous. By filtering out glare and by tinting the lens, some substandard sunglasses allow your natural squinting impulse to relax and your pupils to dilate. As a result, your eyes become susceptible to retina-damaging IR and UV radiation.

How can you — the intrepid naval aviator — best evaluate those shades you're thinking of buying? Only a few manufacturers publish vital statistics with their sunglasses, but those with the best quality lenses do or will gladly provide the information. Additionally the National Society for the Prevention of Blindness suggests several criteria, among them:

Transmission factor. For persons engaged in bright work outside or who contemplate night flying, the experts recommend lenses that block 85-90 percent of sunlight, allowing 10-15 percent to reach the eyes.

UV Transmission. The amount of ultraviolet radiation blocked by the sunglass lens varies widely, but all quality lenses rank high in this important category. Studies continue in order to determine the effect of even small amounts of UV radiation over long periods of time.

IR Transmission. Like UV radiation, quality sunglass lenses rank high in this category, measured in terms of IR radiation blocked.

Color. Neutral gray (or "smoke") is the lens color that retains color fidelity best, but there are advocates of green

*From the MILSPEC

and brown lenses. The transmission curves of green lenses resemble the color sensitivity of the eye, while brown lenses block scattered blue light rays prevalent with dust or moisture in the air, thereby reducing haziness, improving contrast and sharpening details.

Optical Quality. Both lenses of your sunglasses should be evenly matched, equal in color and absorptive qualities. The lenses should be free from waves, surface blemishes, scratches or other distortions that can cause eyestrain. To test the lenses, hold the glasses at arm's length, focusing on a distant vertical line. Move the glasses vertically and horizontally. If the line waivers, the lenses contain distortions and should not be used. However, this test is *not* valid for prescription lenses.

Impact Resistance. The Federal Food and Drug Administration requires that all eyeglass lenses — including sunglass lenses — be made of impact — resistant glass or plastic. *Cruise players beware:* Those Hong Kong specials may not be subject to the same controls.

I have taken the liberty of adding an additional, subjective factor to the list:

Coolness or Macho factor. Varies according to aviation community, geographical locations, type car driven, etc. Subjective, but not insignificant.

The following chart indicates how several popular commercially obtainable sunglasses compare. In no way should it be considered complete, or as an advertisement. Optical quality standards of the type set out below, and not mere style and price, should be your guide when buying sunglasses. Also make *sure* they are impact resistant.

Sunglass	Color/Type Lens	Transmission	UV	IR
FG-58 (American Optical *et al*)	Constant density neutral gray N-15	15 ± percent	99.8 percent	85 percent Note 1
Ray Ban Outdoorsman/ Aviator (Bausch&Lomb)	Constant density Neutral gray G-15	15 percent	99 percent	85 percent Note 2
	Constant density Green	26 percent	99 percent	95 percent
	Constant density Brown	15 percent	99 percent	95 percent
	Reflecting + Neutral gray G-31	4 percent top 23 percent ctr	99 percent	90 percent
Vuarnet	Reflecting +	7.7 percent top	100 percent	90-99 percent Note 3
Skilynx Acier (Vuarnet-France)	Brown	12.2 percent ctr 6.5 percent btm		
Fishing glasses (Eddie Bauer)	Polarizing	25 percent	84 percent	70 percent Note 4

Note 1. The standard. Acceptable for all naval aviators, who scramble for the last gold frames in the supply system. The figures given are from the military specification for FG-58s. Manufacturers may have more stringent standards.

Note 2. Especially strong loyalty among wearers. Traditional sunglasses of light attack community.

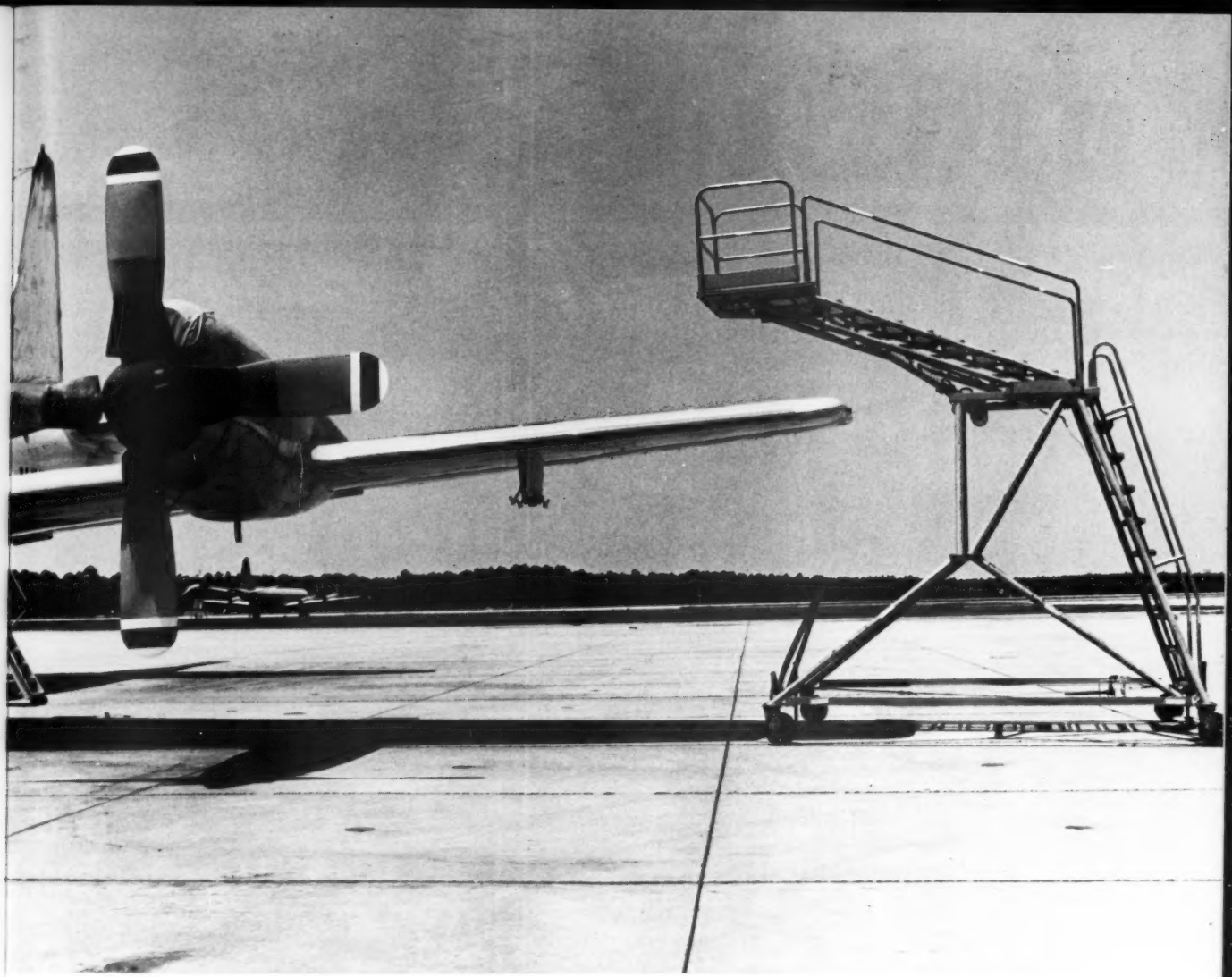
Note 3. Slightly eccentric. Mostly West Coast beach and ski set. Brown lenses pick up moguls.

Note 4. Polarized lenses are not authorized for use in naval aircraft.

CAUTION: Although some manufacturers suggest that certain lenses with particularly high transmission factors are "light" enough for use indoors, or while driving at night, such a practice is bad headwork!

So, next time you select a set of shades, use these standards of judgment — and if the bargains you're picking up don't pass, you'd be smart to consider just how much those "cheap sunglasses" might be costing you!

Acknowledgment is given to the National Society for the Prevention of Blindness, American Optometric Association, Better Vision Institute, Bausch and Lomb, Vuarnet-France, American Optical Company and Navy Opthalmic Support and Training Activity.



Keep Me Clear On The Right

By Lt. Phil Jolly
VP-24

SOUND familiar? This is a common saying in dual piloted aircraft. The pilot in the left seat is expected to direct all cockpit actions in a dual piloted aircraft. One of those actions is to remind the copilot, "Keep me clear on the right," during all ground operations. The question is, who is going to keep us clear on the left? Quite often the pilot in the left seat, when not directing cockpit actions, is intent on the directions from the lineman. Can you be assured that the lineman will keep you clear of all hazards?

The following series of events almost led to a mishap. We were finally taxiing in after a flight from Iceland to NAS "south" which included two intermediate stops and 12 hours from takeoff to landing. Hey, we're back home; time to relax, right? Wrong! The pilot directed the copilot to "Keep me clear on the right," which the copilot acknowledged. As the aircraft rounded the hangar in a left turn we spotted not only our lineman but all of our families.

The lineman began directing the aircraft to continue the left turn. As we started to straighten out, the copilot told the pilot that he felt we were too close to the hangar. The pilot agreed and turned slightly to the right, but due to his intense concentration on the lineman, he never looked to the left. After shutting down and departing the aircraft, we discovered that we had taxied under a B-2 stand and within a couple feet of hitting it.

The long flight, the family distractions and the faith in the lineman were contributing factors; but to a pilot, "Keep me clear on the right," should mean a lot more. ◄

Left to right: AW3 Dean Marcinek, Lt. William Holmes, Ltjg. Gregory Doremus and AWC Don Rogers

Lt. William Holmes
Ltjg. Gregory Doremus
AWC Don Rogers
AW3 Dean Marcinek
HS-5

AFTER completing a passenger transfer at an overseas air station, an SH-3G with a crew of four and four passengers commenced a climbout for return to the ship. Shortly after leveling off at 1,500 feet, the No. 2 engine fire warning caution light illuminated. Lt. Holmes had the crewman confirm the fire, while a quick check of engine instruments revealed nothing abnormal. He passed the controls to his copilot, Ltjg. Doremus, and an immediate aircraft descent was commenced with a turn toward the airfield two miles away. Holmes and the crewmen visually checked outside engine bay doors but there was no evidence of a fire. Shortly afterward, smoke filled the cabin and cockpit. Holmes immediately secured the No. 2 engine and employed the fire extinguisher. An uneventful single-engine landing followed at RAF Akrotiri, Cyprus. Postflight inspection revealed a failure in the combustion section had caused a ruptured fuel line to ignite. Only through proper crew coordination, decisive action and professionalism were the lives of eight people saved, not to mention a valuable aircraft that will fly again another day.

BRAVO ZULU

Lt. Timothy P. Sullivan
Ltjg. Robert Schrader

Lieutenant Timothy P. Sullivan, pilot, and Ltjg. Robert Schrader, RIO, of Fighter Squadron ONE FIVE ONE were 30 minutes into a night mission when the port engine fire warning light illuminated. The light extinguished as the throttle was brought to idle. Checks of all engine gauges and a visual check by a wingman revealed no unusual indications. Schrader contacted the ship. Engine problems were discussed with a squadron representative. Since USS *Midway* was involved in blue water operations, no divert was available, and the decision was made to make a single-engine approach, half-flaps, with the port engine at idle. After a 270-degree turn was made to final at 1,200 feet the starboard engine partially lost power. Sullivan levelled his wings while selecting full afterburner on the starboard engine to arrest the loss of altitude. The engine responded, all gauges reading normal, and Sullivan flew an "Okay" pass to the deck. It should be noted that this was *Schrader's first night trap ever,* but throughout the emergency, he and Sullivan displayed enviable calmness and thorough knowledge of NATOPS procedures.

Ltjg. Robert S. Schrader (left), Lt. Timothy P. Sullivan (right)

Confessions of a Skipper

By Capt. Stan Dunlap, COMNAVAIRLANT Safety

Frankly, I feel like hell.

For the past few minutes I've been sitting here with my thoughts, and I don't seem to like any of them.

You see, when I woke up this morning, I thought right away that it was going to be a fine day. Friday, weekend ahead, my name was on the flight schedule, and I'd left my "in" basket in good shape the night before. All in all, it was going to be the kind of day that all of us look forward to. The trip down the interstate wasn't too bad, and the weather looked great for my low level. I should have known that it couldn't last.

I'd just finished getting suited up when the XO stuck his head in the door and gave me the news; we'd lost one of our men in a traffic accident. Without being told, I instinctively knew who it must be, yet I still asked the question. What I was told only confirmed my initial thoughts, and my guilt attack really began.

I'd better back up a bit. I was the XO when this petty officer first checked aboard, and I'd studied his record before I ever met him. Based on performance evaluations and prior duty assignments, I felt that we were lucky to get such a talented individual. He had come to us following a rather brief tour as a FRAMP* instructor, and I guess that I should have taken the time to ask a few questions. I didn't. I was so happy to see a man with the skills which we so desperately needed that I gave him my stock speech, told him about the upcoming (and overtasked) schedule, then pointed him toward maintenance.

The next few months went by at a gallop. Quickie deployments, day/night bounces, carrier quals, buildups,

*Fleet Replacement Aviation Maintenance Program

schools, leave, packup, unpack, move off, move aboard and the ever present schedule changes. It seemed that there was never enough time for all of the necessary evolutions, much less those things which I had kept putting off until things slacked off just a little bit. Through it all, this "new" petty officer seemed to fit right in. Always where he was needed the most, he soon became indispensable.

I guess that it was right before we went on cruise that I first noticed the change, but even that statement is probably wrong. Now that I think about it, he was in deep trouble long before I ever knew it. The changes were subtle; he was a real pro at hiding the truth, and he'd been at it a long time. In retrospect, I guess what makes me feel the worst is the fact that numerous other people in many other commands had known the truth about this "exceptional" sailor, but never said or did a thing . . . they just transferred the problem out of the door and out of their lives. In any event, his performance began to take a turn for the worse.

At first I attributed it to his failure to make E-7. All of us were shocked when the results came in, but I chalked it up to a momentary problem with a test, sympathized with him about the results, then went back to work. All of us did . . . Cruise was just around the corner, and we were behind the curve in several critical areas. If I'd been a little smarter, I could have asked questions about prior civil convictions. We had just received word on the first of several recent citations he had received, and finally the maintenance officer told me that his maintenance control officer had been covering for this "superior petty officer."

It seems that he was habitually late for muster. Nothing major, just a few minutes here and there, punctuated by an occasional "alarm clock failure." He never did make any close friends in the squadron, and he lived alone. He'd been married at one time, but no one seemed to know why the marriage had broken up. All of us knew why he volunteered for the duty when we had the all hands party, but at the time we all thought this was just one more action on the part of a petty officer who was truly superior in all respects. I can add up all of these things now, but I never did see them in the proper context at a time when I might have done something.

Cruise was especially eventful for me. I took over as commanding officer, and we brought back the same number of planes and people that we started with. Other than that, it was pretty much the same as always. Oh yes, our exceptional petty officer got loaded a few times in port, but who didn't? We all joked about posting a watch on him, but let's face facts . . . TACAIR types work hard, and they play the same way. We sure can't fault a really hard charger for tying one on every once in a while . . . or can we?

You can guess the rest. During the post-deployment standdown, his troubles really began to surface. I even ran into several old acquaintances who not only knew this man, but knew all about his "problem." I even began to get used to seeing his name in the same old places . . . muster reports, civil conviction lists, indebtedness letters and then where I should have placed it almost a year before . . . on a set of orders to the "ARC**." By that time everyone knew that we probably had a full blown alcoholic on our hands, but we also had the schedule to contend with. There were always more tasks than time, and most of the time it was a lot easier to work around what we felt was "just another personnel problem."

He came back to us from alcohol rehab and almost everyone in the squadron avoided him. I guess we were all just plain embarrassed to discuss alcoholism with him, and perhaps as a result of all of this, he withdrew even further. No one will ever know exactly how long he stayed "dry," or if he ever really did at all. I found out for myself that he was drinking again when I was invited to the Acey Deucey Club by the squadron POs, and saw him at the bar with a beer . . . apart from the rest of us. It was right then and there that I confronted him about falling off of the wagon. The answer was easy . . . too easy. It seems that beer was OK . . . he just had to avoid the hard stuff. I was dubious, but I watched him nurse that beer for over an hour. After all, the rest of us were laughing and scratching, so why shouldn't he have a good time?

He died that night. The police stated that he died with enough alcohol in him to make two men legally drunk. In a way, I'm not really sorry that he's dead. If a car hadn't done it, then eventually the liquor would have, so I can rationalize his loss pretty well. The only thing that I'm really having a lot of trouble with is the family of four in the other car. They might have had a future, but not any more. No one could have survived an impact like that.

Could I have done anything to change all of this? I'll keep telling myself "no," but that won't really help.

Frankly, I feel like hell. ◄

**Alcohol Rehabilitation Center

LETTERS

Re: Six Minutes to Eternity (April '84)

Point Mugu, Calif. — In May I celebrated the 20th anniversary of my first enlistment date in the Navy. During the last 20 years, I have repeatedly read about the dangers of shipping hazardous cargo by air. Regularly, I have heard and read horror stories of aborted flights and near mishaps which happened because of gross violations of common sense and of NAVSUP instructions. Your article, "Six Minutes to Eternity," by Lcdr. Joe Towers, VR-57, which appeared in Approach, April 1984, is another (fortunately fictional) account of a mishap waiting to happen.

Yet the problem continues. Sincere, hard working and probably stressed maintenance personnel continue to put everything they need into a box to go. I am confident that few, if any, make a knowledgeable decision to put themselves or the transport crew at risk by sending that hazardous material. I believe the problem is lack of training and CYA (desire to cover all contingencies).

As commanding officer of a squadron whose normal operating mode includes frequent deployments and, therefore, frequent air cargo shipments, I believe unless positive steps are taken, it is just a matter of time until I am embarrassed or worse by one of these incidents. To provide a measure of confidence that a hazardous shipment will not be made, this squadron has a maintenance instruction which requires that:

1. Air cargo will only be presented for shipment by personnel designated by the maintenance officer and listed in the monthly maintenance plan.

2. Only personnel who have been thoroughly trained in all aspects of hazardous cargo transportation will be designated to ship air cargo.

This is a bureaucratic answer to a real problem, but it has certainly brought the level of awareness up in this unit. It assures me that a well meaning DS (poorly informed person) will not hazard my people or a transport aircraft crew by ignorance or disregard for a regulation he doesn't understand.

Cdr. John E. Millward
Commanding Officer
VAQ-34

Re: The Philosophy of Limitations (May '84)

Barbers Point, Hawaii — The article states "Every nugget knows 12 hours from 'bottle to throttle.' A hard and fast rule!"

Hopefully, every nugget knows NATOPS better than what is suggested in the article. Every nugget should know 12 hours from bottle to *brief*. A hard and fast rule!

Lt. Brian R. Cook
HSL-37

Re: This Time Someone Got Hurt (June/July '84)

Norfolk, Va. — Nowhere in this article is it specifically stated that one should not plan on the use of emergency oxygen to assist in the ascent phase of flight. Emergency oxygen is for emergencies only; i.e. to assist the crew in safely *descending* their aircraft when there is an oxygen system malfunction.

The lack of understanding in this factor was the final link in the chain of events that got the crew into the position in which they found themselves. An editorial note would have been very appropriate. The lack of such a note has perhaps perpetuated and even encouraged this dangerous misconception.

T.J. O'Leary
Cdr., MSC, USN
Naval Safety Center

Re: Ehmer's Postulate (June/July '84)

Springfield, Va. — Lcdr. Mills' article brought to mind the recent article in a previous edition in which a Coast Guard aviator recounted his problems with an air traffic controller who interpreted an "HU-25" as a helicopter (Jan '84 "Airbreaks"). Both articles reinforce the fact that "communication" is composed of two related activities, "transmitting" and "receiving," each of which is subject to the distortion of the preconceptions (or ignorances) of the actor involved.

Since leaving the Navy and engaging in general aviation, I have found many instances where call signs can lead to significant misunderstanding. For example, the identification "Piper ——" leaves the controller in a limbo somewhere between "Cub" and "Aerostar," without referring to the flight strip which may or may not contain the amplifying information. It also leads to misidentification in the pattern; despite my strict use of "Tiger 3585U," I was often addressed as "Cherokee entering downwind."

The point is that had the Coast Guard pilot identified himself as "Coast Guard Falcon Jet ——," the misinterpretation would have been obviated. It would behoove a pilot to use civil nomenclature when flying "off-the shelf" aircraft; e.g., T-44 (King Air), C-12 (Super King Air), U-8 (Twin Bonanza), etc., especially in areas in which controllers – both military and civilian – are unfamiliar with the alpha-numeric designation. I suggest this can be an equally confusing problem when filing flight plans by modex to a base away from home. Certainly in the case of an inflight emergency, the pilot should "put himself in the controller's headset," and identify his aircraft as succinctly and accurately as possible — the first time.

Ira J. Rimson, P.E.
Commander, USN (Retired)
System Safety Associates Ltd.

• Detailed aircraft identification procedures are found in the FAA Handbook 7110.65 (Air Traffic Control) and the Airmen's Information Manual. While civil aircraft pilots may include type aircraft in their call sign, military pilots do not. In the vast majority of situations, a controller is able to determine type aircraft by referring to a flight progress strip, the alpha numerics display on radar or experience. Additionally, there is an index in the back of the controller's handbook that cross-references aircraft by manufacturer, model and both civil and military designator.

In summary, controllers adhere to handbook procedures where applicable for the sake of standardization. But there's nothing wrong with a pilot emphasizing his type aircraft on initial contact with ATC if he feels that it's prudent. In those situations not covered by a handbook or NATOPS, pilots and controllers must do what the author suggests . . . communicate!

ACCM F. McGee
Air Traffic Control Analyst
Naval Safety Center

Why should you worry about the Navy's Efficiency and Integrity Program? Because you have to: It's your job.

Approach welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: Approach Editor, Naval Safety Center, NAS Norfolk, VA 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

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MAIN BOOST PUMP FAILURE (HEART)

WARNING INDICATIONS

1. Smoke emitting from main intake.
2. Excessive gross weight.
3. Boost pressure high.

CAUTION

These indications are particularly significant if the airframe in question has high time or was manufactured by a company with a history of early main boost pump failure.

ACTION IN THE EVENT OF MAIN BOOST PUMP WARNING INDICATIONS

1. Contact your flight surgeon.
2. Avoid high stress maneuvers until cleared by your flight surgeon.
3. Consult weight and balance data for ideal operating gross weight (your flight surgeon has this data).
4. Avoid smoke entering the main intake.

WARNING

Smoke entering the main intake is abnormal operation. This can lead to failure of other systems in addition to the main boost pump.

Adapted from USAF MAC Flyer

Don't let your whole day be ruined by a bird strike.

You just might not live through it.

STAY ALERT, SEE AND AVOID!

Naval Safety Center
NAS Norfolk, Virginia

Poster idea contributed by Capt. Kenneth A. Stansell, HML-167, MAG-26, MCAS(H) New River, Jacksonville, N.C.